

FAMOOSr 2011

ESUG 2011

Alexandre Bergel & Jannik Laval

About the workshop

Discuss about the MOOSE software analysis platform

Open to people interested in software analysis

Goals

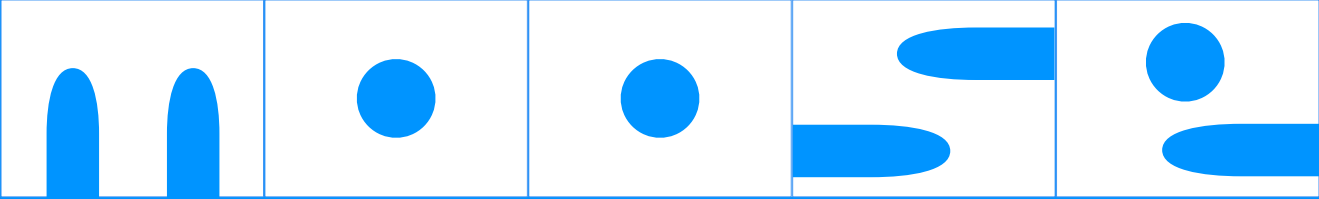
- Knowing what others are working on

- Find oportunities for join work

During the workshop

About 20 people attended the workshop. The room was full

A large majority of the audience knows Moose, however they asked for a small briefing :-)



Moose's pillars

Analysis environment for software systems

4 core actions

navigation: moving between things

selection: grouping things

inspection: inspecting things

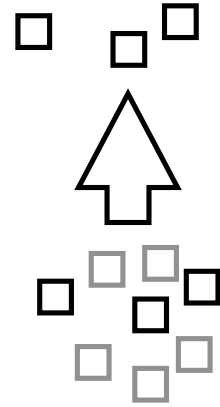
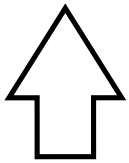
presentation: rendering things

McCabe = 21

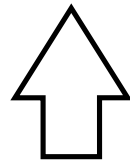
NOM = 102

LOC = 753,000

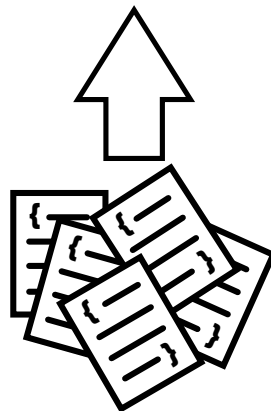
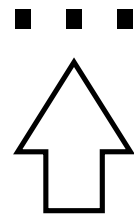
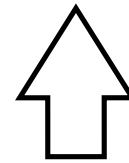
Metrics



Queries



Visualizations



```

System.out
}

if (request.getParameter("age") < 18) {
    StringBuffer sb = new StringBuffer();
    sb.append("Sorry ");
    sb.append(request.getParameter("name"));
    sb.append("You can't see the babes!");
    out.println(sb.toString());
    out.println("Bring an extra $500"); break;
    out.println("Bring an open mind"); break;
    out.println("Bring 5 bottles of 50 Sanscree"); break;
    out.println("Bring lots of money"); break;
    out.println("Bring a swimsuit"); break;
    System.out.println("bean Islands");
    System.out.println("Bring a swimsuit"); break;
    System.out.println("Bring a swimsuit"); break;
}

while (!weekend)
    jumpToNextDay();
}

for (long j=1; j<100000000L; j++){
    System.out.println("Repeat... I'm from boss");
}

```

Currently supported languages

C

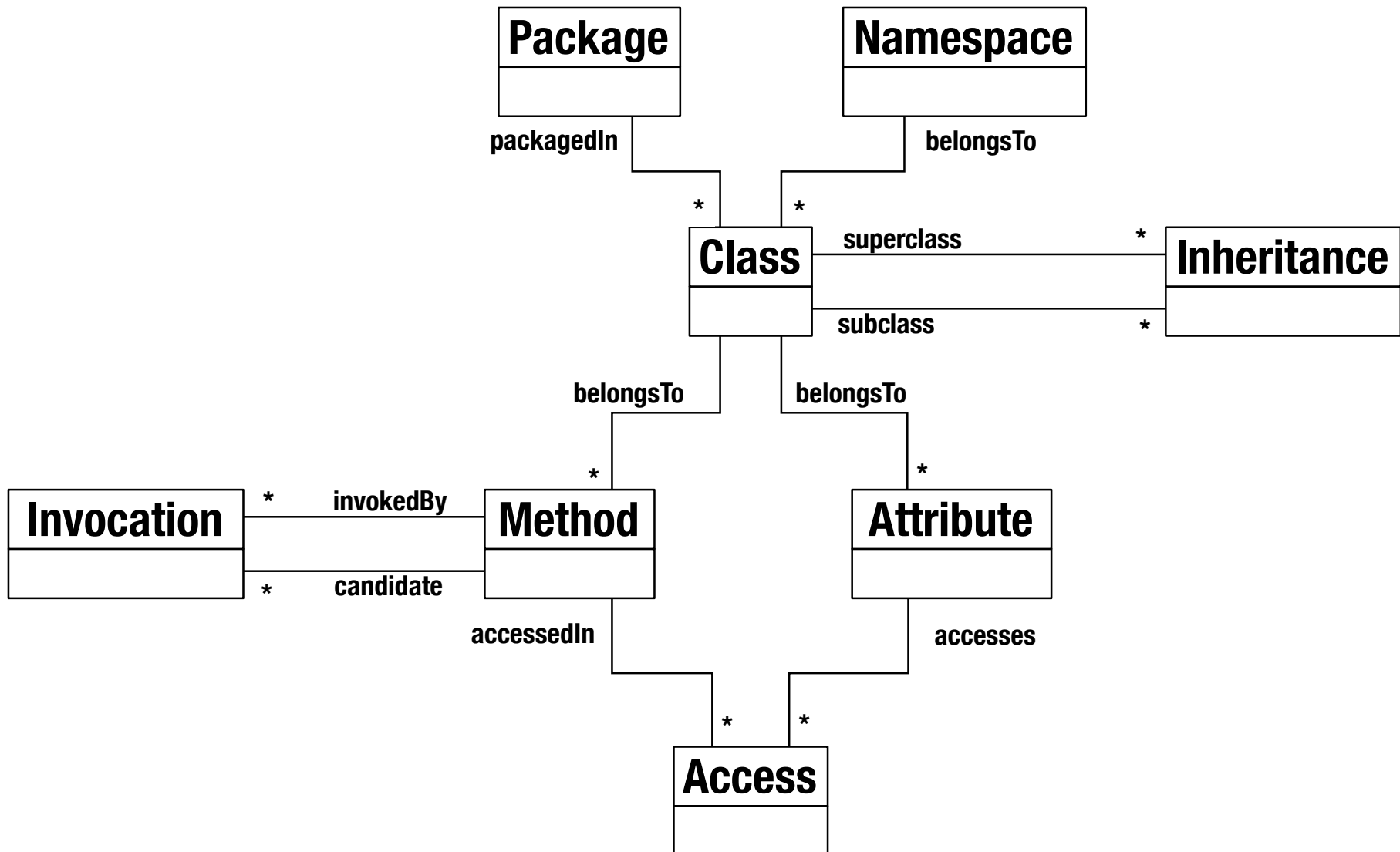
Java

Spem

Smalltalk

ADA (partially)

FAMIX is a language independent meta-model



Scheduled presentation

"The curse of Pharo", digging in Cobol - D. Lont and Stephan Eggermont

Exposing hidden dependencies in heterogenous applications
- Fabrizio Perin

Extending Mondrian with Interactive HTML Visualisation -
Santiago Vidal, Alexandre Bergel, Claudia Marcos, Tudor Girba

Using unit tests to increase accuracy of inter-method dependencies - Alexandre Bergel

Modeling Check style rules - Angel Nunez, Alexandre Bergel, Stéphane Ducasse

The curse of Pharo", digging in Cobol

Presented by Diego and Stephan

Their goal is to replace a large system written in
Cobol

The original developer of the Cobol system passed
away 10 years ago

The current maintainer recently got an heart attack.

Refactoring the application

600+ data files

800+ lib files

First question they have:

do we have all files? use distribution map

can we read the data? Use a glamour browser to navigate between the cobol definitions

Their goals

complete the implementation of the new ERP system by the end of the year

only move data that is actually needed

Deciphering Cobol

Separate description of the data format and the file location

per file fixed record length, but multiple record types in the same file

references between records are by convention

Browser driven development

Create a short feedback loop by letting the client use a browser (made in Glamour)

the curse

The amount of data to analyze is high: 724 Mbyte of raw data

Dealing with cobol

They do not parse Cobol code using a grammar generated by a parser.

They gradually parse using regular expression when they actually need it

They use convention based on name

Their approach may work only for their case study however

Demo

They have two browsers (made in glamour):

INNO browser, for the clients. You can have all the source files and load them.

The data files are presented using a distribution map

Exposing hidden dependencies in heterogenous applications

by Fabrizio from the University of Bern

heterogenous application: applications written in different languages

Fabrizio will shows us a case study with a customer

he wanted to identify the hidden dependencies between the DSL scripts and the Java classes

DSL Scripts and Java classes both share tables in a database

Idea

If a java class map or access a table T

And if a script accesses the same table T

then we deduce a dependency between the script
and the java classes

We qualify it as hidden since it is not explicit in the
source

Metamodeling

Fabrizio has defined a metamodel for this

He has built browsers to navigate between the tables and visually represent

He considers the MySQL databases by using a sql script using PetitParser

Translating a Mondrian visualization into HTML

Presented by Santiago Vidal, from Argentina

He has written an exporter that compiles a structure of Mondrian

He demoed a number of visualizations, including system complexity, distribution map and Hapao

The audience asked about whether a server can listen to the event the user may do. This is ongoing work

Unit tests

presented by Alexandre, myself

the lack of static type annotation prevents one from accurately analyzing smalltalk applications

The idea is to profile the execution of unit tests to reduce the amount of candidate of an invocation

Demonstrated on Arki and Mondrian

Orion

Presented by Jannik Laval

It enables one to explore different path during a quality improvement activity

It extends the FAMIX metamodel to have the difference models information

Demo

Demo using the network Pharo package

AspectMaps

Given by Johan Fabry, from the University of Chile

It shows us how it extended the FAMIX metamodel

An aspect is contained in a namespace

An aspect has a list of advices and pointcut

Johan has to extend Glamour by putting an announcer on the window, thus bypassing the transmission between widgets

Apparently Diego & Stefan experienced the very same problem